

APPENDIX M: SAFETY

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Wild land fire causes destruction of property and loss of life. At the same time, fire is a key function of most western ecosystems and a useful tool in forest management. Policy directs that protection of life and property is the priority in wild land fire management. The following discussion divides the safety issue into two broad areas: Protection of Life and Property, and firefighter safety.

PROTECTION OF LIFE AND PROPERTY

Fires originating on Federal lands may cause destruction of private property and threats to the safety of private citizens. This usually occurs when fires burn from public land into the Wildland Urban Interface (WUI). The Wildland Urban Interface is any point where the fuel feeding a wildfire changes from natural (wildland) fuel to man-made (urban) fuel.

Wildfire hazard to private homes was once considered to be a problem confined to the chaparral of California. Urban sprawl and past suppression policies have brought this problem to the Pacific Northwest and the nation. In 1985 1,400 homes burned in WUI fires in the United States.¹

Specific incidents serve as indicators to the dimensions of the problem. In 1990 the Painted Cave fire destroyed 479 homes in the suburbs of Santa Barbara. Most of these homes were destroyed within two hours of the initial fire report. The Los Alamos fire in May of 2000 burned over 200 homes. The Los Alamos fire was characterized by house-to-house ignition in heavy residential fuels, including wood piles, thick shrubbery and needle covered roofs.² In September of 2000, 64 homes in the Bitterroot valley were destroyed by wildfire. This wildfire and others in Montana were characterized by severe shortages of trained personnel.

The pattern of WUI fires is one of wildfires burning under extreme conditions, burning into communities where fuels adjacent to and within residential areas are conducive to propagation of the fire. The homes are built in a known fire environment and the community itself is highly flammable.

The thrust of legislative and agency action to reduce these fires is to identify areas at risk, to encourage safer zoning, construction and

¹ Laughlin, J., Page, C., *Wildfire Strikes Home Report of the National Wildland Fire Protection Conference*. NFPA SPP-86, Quincy Ma, 1987.

² Cohen J., *E-mail communication of 6-6-00*. On file at the Willamette National Forest, INFMS Analysis Files, Eugene Or.

landscaping practices and to develop contingency plans for evacuating areas at immediate risk.

Federal land managers have little control over decisions made in the Wildland Urban Interface, since most of the interface is on private land, where protection is the responsibility of state, rural fire district and municipal fire organizations.

The federal land manager does have a role in preventing wildfires on federal land from reaching private property. To manage the risk to life and property, some researchers recommend establishing areas where a fuels management project is likely to reduce ladder fuels or horizontal fuel continuity or total loading of available fuels.³ To the extent that this can be done on federal property adjacent to at-risk private lands, it may be an effective option.

In some cases federal resources may be applied to lands in the Wildland Urban Interface at the request of property owners. Such arrangements are currently rare.

Options for Protection of Life and Property

The property owner in the Wildland Urban Interface has many options for preventing wildfire damage. Modification of fuels (pruning, thinning, etc) within 30 meters of a home is a critical factor in preventing ignition of the home during a wildfire. Housekeeping habits such as removing debris from rooftops is surprisingly effective in preventing loss from wildfire. At the neighborhood and community level, people can form community organizations to work for better zoning and construction codes.

FIREFIGHTER SAFETY

Fire suppression involves working in a hazardous environment. From 1901 to 1996 a total of six hundred and ninety nine fire fighters have been killed while suppressing forest fires in the United States. Thirty of those firefighters were killed fighting fires in the Northwest (Oregon and Washington).

Approximately 407 of the national fatalities were due to fast moving fires 'over running' firefighters. Approximately 21 of the fatalities were from firefighters being hit by snags (dead trees).⁴

Despite a heavy emphasis on safety and numerous advances in technology, roughly twenty workers lose their lives each year fighting wild fire in the United States.

The INFMS analysis area is almost entirely within Lane and Linn Counties. A look at injury and fatality statistics for these Counties

³ Cohen, J. *Preventing Disaster: Home Ignitability in the Wildland Urban Interface*, 2000 *Journal of Forestry*, 98(3):15-21.

⁴ National Wildfire Coordinating Group, *Historical Wildland Firefighter Fatalities 1910-1996*, USDA, USDI, NASF, Boise 1996

illustrates the hazardous nature of fire fighting in the steep terrain and large timber found in these Counties.

**ACCEPTED, DISABLING WORKERS COMPENSATION CLAIMS FOR WILDLAND FIREFIGHTING
FOR Forestry Services (SIC: 0851) & Administration of Environmental Quality Programs (SIC: 951)**

OREGON, 1990-PRESENT

COUNTY OF INJURY	11 year											
	TOTAL	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 *
<i>Year Total</i>	<i>160</i>	7	4	17	5	52	7	26	4	8	15	15
LANE	29	0	1	7	1	1	0	7	0	4	6	2
JACKSON	13	0	0	6	0	6	0	0	0	0	1	0
JOSEPHINE	11	1	1	1	0	5	3	0	0	0	0	
LINN	9	0	0	0	0	0	0	2	0	2	2	3
KLAMATH	8	0	0	1	0	3	1	1	1	1	0	0
DOUGLAS	7	0	0	1	4	0	0	2	0	0	0	0
DESCHUTES	6	4	0	0	0	0	0	2	0	0	0	0
GRANT	6	0	0	0	0	2	1	1	1	0	1	0
MARION	6	0	0	0	0	1	0	2	1	1	1	0
UMATILLA	6	0	0	0	0	5	0	1	0	0	0	0
UNION	4	0	0	0	0	3	0	0	1	0	0	0
WALLOWA	4	1	0	0	0	3	0	0	0	0	0	0
BAKER	2	0	0	0	0	2	0	0	0	0	0	0
MALHEUR	2	1	0	0	0	0	1	0	0	0	0	0
WASHINGTON	2	0	0	0	0	0	0	2	0	0	0	0
CLACKAMAS	1	0	0	0	0	0	0	0	0	0	1	0
COOS	1	0	1	0	0	0	0	0	0	0	0	0
HARNEY	1	0	0	0	0	1	0	0	0	0	0	0
LAKE	1	0	0	0	0	0	1	0	0	0	0	0
WHEELER	1	0	0	0	0	0	0	1	0	0	0	0

* Note 2000 data is preliminary and only contains claims accepted between January to September.

SOURCE: OREGON DCBS, IMD/R&A (10/00) W46.IRUSFS RS01

The nature of fire fighting is that it is conducted in a wildland environment, with the usual hazards of working in the woods. Add to that the smoke and confusion of the fire environment. Add to that the movement and working of large numbers of crews, equipment and aircraft. Finally, factor in the flaming front of the fire, the burning snags, the rolling rocks. Fire management work is inherently dangerous. Managing the rate of injuries and fatalities may be primarily a matter of limiting exposure.

The concept of limiting exposure is reflected in the Integrated Natural Fuels Management Strategy for each of the treatment types used to manage fuels.

Firefighter Safety Options by Treatment Type

Wild land Fire for Resource Benefit

Under WFRB, managers have the option to allow fires of low or moderate intensity to burn until they reach a road, or flat ground, or until some other safety condition is met.

Full suppression

Full suppression is used in a number of situations where keeping a fire small is the safest option.

All treatments contemplated under INFMS start with an assumption elucidated in “Protecting People and Sustaining Resources in Fire-Adapted Ecosystems – A Cohesive Strategy.”⁵

“The strategy is also based on the premise that within fire-adapted ecosystems, fire-maintained forests and grasslands are inherently more safe for firefighters and the public than ecosystems in which fire is excluded.”

Prescribed Fire

Prescribed fires may be ignited at times of low risk to fire fighters.

Mechanical treatment

This treatment method allows deliberate and methodical treatment of fuels outside of fire season.

⁵ USDA Forest Service, *Protecting People and Sustaining Resources in Fire-Adapted Ecosystems – A Cohesive Strategy* Washington DC, December 31, 1999.